

2002

## SEQUENCE LISTING

<110> Estell, David A.  
Harding, Fiona A.

<120> PROTEINS PRODUCING AN ALTERED IMMUNOGENIC RESPONSE AND  
METHODS OF MAKING AND USING THE SAME

<130> A-08099/DJB/LAV

<140> US 09/506,135

<141> 2000-03-08

<150> US 09/060,872

<151> 1998-04-15

<160> 236

<170> PatentIn Ver. 2.1

<210> 1

<211> 1495

<212> DNA

<213> Bacillus amyloliquefaciens

<310>

<311> mat\_peptide

<312> (417)..(1495)

<410>

<411> CD3

<412> (96)..(1244)

<510>

<511> misc\_feature

<512> (582)..(584)

<513> The nnn at positions 582 through 584 which in a  
preferred embodiment (aat) is to code for  
asparagine, but which may also code for proline.

<610>

<611> misc\_feature

<612> (585)..(587)

<613> The nnn at positions 585 through 587 which in a  
preferred embodiment (cct) is to code for proline,  
but which may also code for asparagine.

<710>

<711> misc\_feature

<712> (597)..(599)

<713> The nnn at positions 597 to 599 which in a  
preferred embodiment (aac) is to code for  
asparagine, but which may also code for aspartic acid.

<810>

<811> misc\_feature

<812> (678)..(680)

<813> The nnn at positions 678 through 680 which in a  
preferred embodiment (gca) is to code for  
alanine, but which may also code for serine.

RECEIVED  
JUL 29 2002  
TECH CENTER 1600/2900

<220>  
 <221> misc feature  
 <222> (681)..(683)  
 <223> The nnn at positions 681 through 683 which in a preferred embodiment (tca) is to code for serine, but which may also code for alanine.  
  
 <220>  
 <221> misc feature  
 <222> (708)..(710)  
 <223> The nnn at positions 708 through 710 which in a preferred embodiment (gct) is to code for alanine, but which may also code for aspartic acid.  
  
 <220>  
 <221> misc feature  
 <222> (711)..(713)  
 <223> The nnn at positions 711 through 713 which in a preferred embodiment (gac) is to code for aspartic acid, but which may also code for alanine.  
  
 <220>  
 <221> misc feature  
 <222> (898)..(899)  
 <223> The nnn at positions 898 through 899 which in a preferred embodiment (act) is to code for threonine, but which may also code for serine.  
  
 <220>  
 <221> misc feature  
 <222> (891)..(893)  
 <223> The nnn at positions 891 through 893 which in a preferred embodiment (tcc) is to code for serine, but which may also code for threonine.  
  
 <220>  
 <221> misc feature  
 <222> (1167)..(1169)  
 <223> The nnn at positions 1167 through 1169 which in a preferred embodiment (gaa) is to code for glutamic acid, but which may also code for glutamine.

<400> 1  
 ggtctactaa aatattatc catactatac aattaatata cagaataatc tgtctattgg 60  
  
 attctgtca aatgaaaaaa aggagaggat aaaga atg agc ggc aaa aaa gta 113  
 Met Arg Gly Lys Lys Val  
 -105  
  
 tgg atc agt ttg ctg ttt gct tta ggc tta atc ttc acg atg ggc ttc 161  
 Trp Ile Ser Leu Leu Phe Ala Leu Ala Leu Ile Phe Thr Met Ala Phe  
 -100 -95 -90  
  
 ggc agc aca tcc tct gcc cag ggc gca ggg aaa tca aac ggc gaa aag 209  
 Gly Ser Thr Ser Ser Ala Gln Ala Ala Gly Lys Ser Asn Gly Glu Lys  
 -85 -80 -75  
  
 aaa tat att gtc ggg ttt aaa cag aca atg agc acg atg agc gcc gct 257  
 Lys Tyr Ile Val Gly Phe Lys Gln Thr Met Ser Thr Met Ser Ala Ala

-55										-60					-55					
aag	aag	aaa	gat	gtc	att	tct	gaa	aaa	ggc	ggg	aaa	gtg	caa	aag	caa	305				
Lys	Lys	Lys	Asp	Val	Ile	Ser	Glu	Lys	Gly	Gly	Lys	Val	Gln	Lys	Gln					
			-50				-45				-40									
ttc	aaa	tat	gta	gac	gca	gct	tca	gct	aca	tta	aac	gaa	aaa	gct	gta	353				
Phe	Lys	Tyr	Val	Asp	Ala	Ala	Ser	Ala	Thr	Leu	Asn	Glu	Lys	Ala	Val					
			-35				-30				-25									
aaa	gaa	ttg	aaa	aaa	gac	ccg	agg	gtc	gct	tac	gtt	gaa	gaa	gat	cac	401				
Lys	Glu	Leu	Lys	Lys	Asp	Pro	Ser	Val	Ala	Tyr	Val	Glu	Glu	Asp	His					
			-20				-15				-10									
gta	gca	cat	ggg	tac	ggg	cag	tcc	gtg	cct	tac	ggc	gta	tca	caa	att	449				
Val	Ala	His	Ala	Tyr	Ala	Gln	Ser	Val	Pro	Tyr	Gly	Val	Ser	Gln	Ile					
			-5				-1				5									
aaa	gac	cct	gct	ctg	caa	tct	caa	ggc	tac	act	gga	tta	aac	gtt	aac	497				
Lys	Ala	Pro	Ala	Leu	His	Ser	Gln	Gly	Tyr	Thr	Gly	Ser	Asn	Val	Lys					
			15				20				25									
gta	ggg	gtt	atc	gac	agg	ggt	atc	gat	tct	tct	cat	cct	gat	tta	aag	545				
Val	Ala	Val	Ile	Asp	Ser	Gly	Ile	Asp	Ser	Ser	His	Pro	Asp	Leu	Lys					
			30				35				40									
gta	gca	ggc	gga	gac	agg	atg	gtt	cct	tct	gaa	aca	nnn	nnn	ttc	caa	593				
Val	Ala	Gly	Gly	Ala	Ser	Met	Val	Pro	Ser	Glu	Thr	Xaa	Xaa	Phe	Gln					
			45				50				55									
gac	nnn	aac	tct	caa	gga	act	caa	gtt	gac	ggc	aca	gtt	ggg	gct	ctc	641				
Asp	Xaa	Asn	Ser	His	Gly	Thr	His	Val	Ala	Gly	Thr	Val	Ala	Ala	Leu					
			60				65				70									
aac	aac	tca	atc	ggt	gta	tta	ggc	gtt	ggg	cca	agg	nnn	nnn	cct	tac	689				
Asn	Asn	Ser	Ile	Gly	Val	Leu	Gly	Val	Ala	Pro	Ser	Xaa	Xaa	Leu	Tyr					
			80				85				90									
gct	gta	aaa	gtt	ctc	ggt	nnn	nnn	ggt	tcc	ggc	caa	tac	agg	tgg	atc	737				
Ala	Val	Lys	Val	Leu	Gly	Xaa	Xaa	Gly	Ser	Gly	Gln	Tyr	Ser	Trp	Ile					
			95				100				105									
att	aac	gga	atc	gag	tgg	ggg	atc	gca	aac	aac	atg	gac	gtt	att	aac	785				
Ile	Asn	Gly	Ile	Glu	Trp	Ala	Ile	Ala	Asn	Asn	Met	Asp	Val	Ile	Asn					
			110				115				120									
atg	agg	ctc	ggc	gga	cct	tct	ggt	tct	gct	gct	tta	aaa	ggg	gca	gtt	833				
Met	Ser	Leu	Gly	Gly	Pro	Ser	Gly	Ser	Ala	Ala	Leu	Lys	Ala	Ala	Val					
			125				130				135									
gat	aaa	ggc	gtt	gca	tcc	ggc	gtc	gta	gtc	gtt	ggg	gca	ggc	ggt	aac	881				
Asp	Lys	Ala	Val	Ala	Ser	Gly	Val	Val	Val	Val	Ala	Ala	Ala	Gly	Asn					
			140				145				150									
gaa	ggc	nnn	nnn	ggc	agg	tca	agg	aca	gtg	ggc	tac	cct	ggt	aaa	tac	929				
Glu	Gly	Xaa	Xaa	Gly	Ser	Ser	Ser	Thr	Val	Gly	Tyr	Pro	Gly	Lys	Tyr					
			160				165				170									
cct	tct	gtc	att	gca	gta	ggc	gct	gtt	gac	agg	agg	aac	caa	aga	gca	977				
Pro	Ser	Val	Ile	Ala	Val	Gly	Ala	Val	Asp	Ser	Ser	Asn	Gln	Arg	Ala					

175	180	185	
tct ttc tca agc gta gga cct gag ctt gat gtc atg gca cct ggc gta			1035
Ser Phe Ser Ser Val Gly Pro Gln Leu Asp Val Met Ala Pro Gly Val			
190	195	200	
tct atc aaa agc acg ctt cct gga aac aaa tac ggg ggc tac aac ggt			1073
Ser Ile Gln Ser Thr Leu Pro Gly Asn Lys Tyr Gly Ala Tyr Asn Gly			
205	210	215	
acg tca atg gca tct cgc cac gtt gcc gga ggc gct gct ttg att ctt			1121
Thr Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu Ile Leu			
220	225	230	235
tct aag cac cgc aac tgg aca aac act caa gtc cgc agc agt tta nnn			1159
Ser Lys His Pro Asn Trp Thr Asn Thr Gln Val Arg Ser Ser Leu Xaa			
240	245	250	
aac acc act aca aaa ctt ggt gat tct ttc tac tat gga aaa ggc ctg			1217
Asn Thr Thr Thr Lys Leu Gly Asp Ser Phe Tyr Tyr Gly Lys Gly Leu			
255	260	265	
att aat ata cag gcg gca gct cag taa aacataaaaa accggccttg			1264
Ile Asn Val Gln Ala Ala Ala Gln			
270	275		
gcacggcgag ttttttatt ttctttctc cgcattgttca atcgcctcca taatcgacgg			1324
atggctccct ctgaatatt taacgajaaa cgggggggttg acccggtca gtcccgtaac			1334
gcacagctcc tgaaa gctc caatcgagc ttccgggttt ccggtcagct caatgcgcta			1444
acggtcgag gcgttttctt gatacgggga gacggcattc gtaatcggat c			1495

<110> 1  
 <111> 391  
 <112> PRT  
 <113> Bacillus amyloliquefaciens

<118>  
 <121> VARIANT  
 <122> (163)...(163)  
 <123> Xaa = Asn or Pro

<1218>  
 <1219> VARIANT  
 <1221> (164)...(164)  
 <1222> Xaa = Pro or Asn

<1216>  
 <1217> VARIANT  
 <1220> (168)...(168)  
 <1221> Xaa = Asn or Asp

<1220>  
 <1221> VARIANT  
 <1222> (195)...(195)  
 <1223> Xaa = Ala or Ser

Met	Arg	Gly	Lys	Lys	Val	Trp	Ile	Ser	Leu	Leu	Phe	Ala	Leu	Ala	Leu
				5					10					15	
Ile	Phe	Thr	Met	Ala	Phe	Gly	Ser	Thr	Ser	Ser	Ala	Gln	Ala	Ala	Gly
			20				25						30		
Lys	Ser	Asn	Gly	Glu	Lys	Lys	Tyr	Ile	Val	Gly	Phe	Lys	Gln	Thr	Met
		35					40					45			
Ser	Thr	Met	Ser	Ala	Ala	Lys	Lys	Lys	Asp	Val	Ile	Ser	Glu	Lys	Gly
		50				55					60				
Gly	Lys	Val	Gln	Lys	Gln	Phe	Lys	Tyr	Val	Asp	Ala	Ala	Ser	Ala	Thr
					70					75					80
Ile	Asn	Glu	Lys	Ala	Val	Lys	Glu	Leu	Lys	Lys	Asp	Pro	Ser	Val	Ala
			85						90					95	
Tyr	Val	Glu	Glu	Asp	His	Val	Ala	His	Ala	Tyr	Ala	Gln	Ser	Val	Pro
			100					105					110		
Tyr	Gly	Val	Ser	Gln	Ile	Lys	Ala	Pro	Ala	Leu	His	Ser	Gln	Gly	Tyr
		115					120					125			
Thr	Gly	Ser	Asn	Val	Lys	Val	Ala	Val	Ile	Asp	Ser	Gly	Ile	Asp	Ser
		130				135					140				
Ser	His	Pro	Asp	Leu	Lys	Val	Ala	Gly	Gly	Ala	Ser	Met	Val	Pro	Ser
					150					155					160
Glu	Thr	Kaa	Kaa	Phe	Gln	Asp	Kaa	Asn	Ser	His	Gly	Thr	His	Val	Ala
				165					170					175	
Gly	Thr	Val	Ala	Ala	Leu	Asn	Asn	Ser	Ile	Gly	Val	Leu	Gly	Val	Ala
			180					185					190		
Pro	Ser	Kaa	Kaa	Leu	Tyr	Ala	Val	Lys	Val	Leu	Gly	Kaa	Kaa	Gly	Ser
		195					200					205			
Gly	Gln	Tyr	Ser	Trp	Ile	Ile	Asn	Gly	Ile	Glu	Trp	Ala	Ile	Ala	Asn
		210				215					220				
Asn	Met	Asp	Val	Ile	Asn	Met	Ser	Leu	Gly	Gly	Pro	Ser	Gly	Ser	Ala

235	230	235	240
Ala Leu Lys Ala	Ala Val Asp Lys Ala	Val Ala Ser Gly Val	Val Val
	245	250	255
Val Ala Ala Ala	Gly Asn Glu Gly Xaa Xaa	Gly Ser Ser Ser	Thr Val
	260	265	270
Gly Tyr Pro Gly	Lys Tyr Pro Ser Val Ile	Ala Val Gly Ala	Val Asp
	275	280	285
Ser Ser Asn Gln	Arg Ala Ser Phe Ser	Ser Val Gly Pro	Glu Leu Asp
	290	295	300
Val Met Ala Pro	Gly Val Ser Ile Gln Ser	Thr Ile Pro Gly	Asn Lys
	305	310	315
Tyr Gly Ala Tyr	Asn Gly Thr Ser Met	Ala Ser Pro His	Val Ala Gly
	320	325	330
Ala Ala Ala Leu	Ile Leu Ser Lys His	Pro Asn Trp Thr	Asn Thr Gln
	335	340	345
Val Arg Ser Ser	Leu Xaa Asn Thr Thr	Lys Leu Gly Asp	Ser Phe
	350	355	360
Tyr Tyr Gly Lys	Gly Leu Ile Asn Val	Gln Ala Ala Ala	Gln
	365	370	375

4110-3  
 4111-175  
 4112- PRT  
 4113- Bacillus amyloliquefaciens

4400-3
Ala Gln Ser Val Pro Tyr Gly Val Ser Gln Ile Lys Ala Pro Ala Leu
5 10 15
His Ser Gln Gly Tyr Thr Gly Ser Asn Val Lys Val Ala Val Ile Asp
20 25 30
Ser Gly Ile Asp Ser Ser His Pro Asp Leu Lys Val Ala Gly Gly Ala
35 40 45
Ser Met Val Pro Ser Glu Thr Asn Pro Phe Gln Asp Asn Asn Ser His
50 55 60
Gly Thr His Val Ala Gly Thr Val Ala Ala Leu Asn Asn Ser Ile Gly
65 70 75 80
Val Leu Gly Val Ala Pro Ser Ala Ser Leu Tyr Ala Val Lys Val Leu
85 90 95
Gly Ala Asp Gly Ser Gly Gln Tyr Ser Trp Ile Ile Asn Gly Ile Glu
100 105 110
Trp Ala Ile Ala Asn Asn Met Asp Val Ile Asn Met Ser Leu Gly Gly
115 120 125
Pro Ser Gly Ser Ala Ala Leu Lys Ala Ala Val Asp Lys Ala Val Ala
130 135 140
Ser Gly Val Val Val Val Ala Ala Ala Gly Asn Glu Gly Thr Ser Gly
145 150 155 160
Ser Ser Ser Thr Val Gly Tyr Pro Gly Lys Tyr Pro Ser Val Ile Ala
165 170 175

Val Gly Ala Val Asp Ser Ser Asn Gln Arg Ala Ser Phe Ser Ser Val  
 180 185 190  
 Gly Pro Glu Leu Asp Val Met Ala Pro Gly Val Ser Ile Gln Ser Thr  
 195 200 205  
 Leu Pro Gly Asn Lys Tyr Gly Ala Tyr Asn Gly Thr Ser Met Ala Ser  
 210 215 220  
 Pro His Val Ala Gly Ala Ala Ala Leu Ile Leu Ser Lys His Pro Asn  
 225 230 235 240  
 Trp Thr Asn Thr Gln Val Arg Ser Ser Leu Glu Asn Thr Thr Thr Lys  
 245 250 255  
 Leu Gly Asp Ser Phe Tyr Tyr Gly Lys Gly Leu Ile Asn Val Gln Ala  
 260 265 270  
 Ala Ala Gln  
 275

0110> 4  
 0111> 275  
 0112> PRT  
 0113> Bacillus subtilis

0110> 4  
 Ala Gln Ser Val Pro Tyr Gly Ile Ser Gln Ile Lys Ala Pro Ala Leu  
 1 5 10 15  
 His Ser Gln Gly Tyr Thr Gly Ser Asn Val Lys Val Ala Val Ile Asp  
 20 25 30  
 Ser Gly Ile Asp Ser Ser His Pro Asp Leu Asn Val Arg Gly Gly Ala  
 35 40 45  
 Ser Phe Val Pro Ser Glu Thr Asn Pro Tyr Gln Asp Gly Ser Ser His  
 50 55 60  
 Gly Thr His Val Ala Gly Thr Ile Ala Ala Leu Asn Asn Ser Ile Gly  
 65 70 75 80  
 Val Leu Gly Val Ser Pro Ser Ala Ser Leu Tyr Ala Val Lys Val Leu  
 85 90 95  
 Asp Ser Thr Gly Ser Gly Gln Tyr Ser Trp Ile Ile Asn Gly Ile Glu  
 100 105 110  
 Trp Ala Ile Ser Asn Asn Met Asp Val Ile Asn Met Ser Leu Gly Gly  
 115 120 125  
 Pro Thr Gly Ser Thr Ala Leu Lys Thr Val Val Asp Lys Ala Val Ser  
 130 135 140  
 Ser Gly Ile Val Val Ala Ala Ala Ala Gly Asn Gln Gly Ser Ser Gly  
 145 150 155 160  
 Ser Thr Ser Thr Val Gly Tyr Pro Ala Lys Tyr Pro Ser Thr Ile Ala



Thr Asn Thr Ile Gly Tyr Pro Ala Lys Tyr Asp Ser Val Ile Ala Val  
 165 170 175  
 Gly Ala Val Asp Ser Asn Ser Asn Arg Ala Ser Phe Ser Ser Val Gly  
 180 185 190  
 Ala Glu Leu Gln Val Met Ala Pro Gly Ala Gly Val Tyr Ser Thr Tyr  
 195 200 205  
 Pro Thr Asn Thr Tyr Ala Thr Leu Asn Gly Thr Ser Met Ala Ser Pro  
 210 215 220  
 His Val Ala Gly Ala Ala Ala Leu Ile Leu Ser Lys His Pro Asn Leu  
 225 230 235 240  
 Ser Ala Ser Gln Val Arg Asn Arg Leu Ser Ser Thr Ala Thr Tyr Leu  
 245 250 255  
 Gly Ser Ser Phe Tyr Tyr Gly Lys Gly Leu Ile Asn Val Gln Ala Ala  
 260 265 270  
 Ala Gln

210-6  
 211-269  
 212-PRT  
 213-Bacillus lentus

240-6  
 Ala Gln Ser Val Pro Trp Gly Ile Ser Arg Val Gln Ala Pro Ala Ala  
 5 10 15  
 His Asn Arg Gly Leu Thr Gly Ser Gly Val Lys Val Ala Val Leu Asp  
 20 25 30  
 Thr Gly Ile Ser Thr His Pro Asp Leu Asn Ile Arg Gly Gly Ala Ser  
 35 40 45  
 Phe Val Pro Gly Glu Pro Ser Thr Gln Asp Gly Asn Gly His Gly Thr  
 50 55 60  
 His Val Ala Gly Thr Ile Ala Ala Leu Asn Asn Ser Ile Gly Val Leu  
 65 70 75 80  
 Gly Val Ala Pro Ser Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala  
 85 90 95  
 Ser Gly Ser Gly Ser Val Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala  
 100 105 110  
 Gly Asn Asn Gly Met His Val Ala Asn Leu Ser Leu Gly Ser Pro Ser  
 115 120 125  
 Pro Ser Ala Thr Leu Glu Gln Ala Val Asn Ser Ala Thr Ser Arg Gly  
 130 135 140  
 Val Leu Val Val Ala Ala Ser Gly Asn Ser Gly Ala Gly Ser Ile Ser  
 145 150 155 160

Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val Gly Ala Thr Asp Gln  
 165 170 175  
 Asn Asn Asn Arg Ala Ser Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile  
 180 185 190  
 Val Ala Pro Gly Val Asn Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr  
 195 200 205  
 Ala Ser Leu Asn Gly Thr Ser Met Ala Thr Pro His Val Ala Gly Ala  
 210 215 220  
 Ala Ala Leu Val Lys Gln Lys Asn Pro Ser Trp Ser Asn Val Gln Ile  
 225 230 235 240  
 Arg Asn His Leu Lys Asn Thr Ala Thr Ser Leu Gly Ser Thr Asn Leu  
 245 250 255  
 Tyr Gly Ser Gly Leu Val Asn Ala Glu Ala Ala Thr Arg  
 260 265

<210> 7  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <221> Description of Artificial Sequence: Synthetic

<210> 7  
 Ile Lys Asp Phe His Val Tyr Phe Arg Glu Ser Arg Asp Ala Gly  
 1 5 10 15

<211> 8  
 <212> 15  
 <213> PPT  
 <213> Artificial Sequence

<220>  
 <221> Description of Artificial Sequence: Synthetic

<210> 8  
 Leu Glu Gln Ala Val Asn Ser Ala Thr Ser Arg Gly Val Leu Val  
 1 5 10 15

<210> 9  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <221> Description of Artificial Sequence: Synthetic

<210> 9  
 Ala Gln Ser Val Pro Trp Gly Ile Ser Arg Val Gln Ala Pro Ala  
 1 5 10 15

<210> 10  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<214>  
 <215> Description of Artificial Sequence: Synthetic

<401> 11  
 Val Pro Trp Gly Ile Ser Arg Val Gln Ala Pro Ala Ala His Asn  
 1 5 10 15

<210> 11  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<214>  
 <215> Description of Artificial Sequence: Synthetic

<401> 11  
 Gly Ile Ser Arg Val Gln Ala Pro Ala Ala His Asn Arg Gly Leu  
 1 5 10 15

<210> 13  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<214>  
 <215> Description of Artificial Sequence: Synthetic

<401> 13  
 Arg Val Gln Ala Pro Ala Ala His Asn Arg Gly Leu Thr Gly Ser  
 1 5 10 15

<210> 13  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<214>  
 <215> Description of Artificial Sequence: Synthetic

<401> 13  
 Ala Pro Ala Ala His Asn Arg Gly Leu Thr Gly Ser Gly Val Lys  
 1 5 10 15

<210> 14  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>

<23> Description of Artificial Sequence: Synthetic

<400> 14

Ala His Asn Arg Gly Leu Thr Gly Ser Gly Val Lys Val Ala Val  
1 5 10 15

<400> 15

<400> 15

<400> EFT

<400> Artificial Sequence

<23>

<23> Description of Artificial Sequence: Synthetic

<400> 15

Arg Gly Leu Thr Gly Ser Gly Val Lys Val Ala Val Leu Asp Thr  
1 5 10 15

<400> 16

<400> 15

<400> EFT

<400> Artificial Sequence

<23>

<23> Description of Artificial Sequence: Synthetic

<400> 16

Thr Gly Ser Gly Val Lys Val Ala Val Leu Asp Thr Gly Ile Ser  
1 5 10 15

<400> 17

<400> 15

<400> EFT

<400> Artificial Sequence

<23>

<23> Description of Artificial Sequence: Synthetic

<400> 17

Gly Val Lys Val Ala Val Leu Asp Thr Gly Ile Ser Thr His Pro  
1 5 10 15

<400> 18

<400> 15

<400> EFT

<400> Artificial Sequence

<23>

<23> Description of Artificial Sequence: Synthetic

<400> 18

Val Ala Val Leu Asp Thr Gly Ile Ser Thr His Pro Asp Leu Asn  
1 5 10 15

<210> 19

Q111> 15  
Q112> PPT  
Q113> Artificial Sequence

Q120>  
Q121> Description of Artificial Sequence: Synthetic

Q400> 18  
Leu Asp Thr Gly Ile Ser Thr His Pro Asp Leu Asn Ile Arg Gly  
1 5 10 15

Q110> 16  
Q111> 16  
Q112> PPT  
Q113> Artificial Sequence

Q114>  
Q115> Description of Artificial Sequence: Synthetic

Q400> 20  
Gly Ile Ser Thr His Pro Asp Leu Asn Ile Arg Gly Gly Ala Ser  
1 5 10 15

Q110> 21  
Q111> 15  
Q112> PPT  
Q113> Artificial Sequence

Q114>  
Q115> Description of Artificial Sequence: Synthetic

Q400> 21  
Thr His Pro Asp Leu Asn Ile Arg Gly Gly Ala Ser Phe Val Pro  
1 5 10 15

Q110> 21  
Q111> 15  
Q112> PPT  
Q113> Artificial Sequence

Q114>  
Q115> Description of Artificial Sequence: Synthetic

Q400> 12  
Asp Leu Asn Ile Arg Gly Gly Ala Ser Phe Val Pro Gly Glu Pro  
1 5 10 15

Q110> 23  
Q111> 19  
Q112> PPT  
Q113> Artificial Sequence

Q114>  
Q115> Description of Artificial Sequence: Synthetic

Q400> 25

Ile Arg Gly Gly Ala Ser Phe Val Pro Gly Glu Pro Ser Thr Gln  
 1 5 10 15

<210> 14  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 24  
 Gly Ala Ser Phe Val Pro Gly Glu Pro Ser Thr Gln Asp Gly Asn  
 1 5 10 15

<210> 15  
 <211> 16  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 15  
 Phe Val Pro Gly Glu Pro Ser Thr Gln Asp Gly Asn Gly His Gly  
 1 5 10 15

<210> 16  
 <211> 17  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 16  
 Gly Glu Pro Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val  
 1 5 10 15

<210> 17  
 <211> 18  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 17  
 Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr  
 1 5 10 15

<210> 18  
 <211> 19  
 <212> PPT  
 <213> Artificial Sequence

Q1208

Q128 Description of Artificial Sequence: Synthetic

Q1208-13

Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile Ala Ala  
1 5 10 15

Q1208-13

Q1212-15

Q1212 PPT

Q1212 Artificial Sequence

Q1209

Q128 Description of Artificial Sequence: Synthetic

Q1209-13

Gly His Gly Thr His Val Ala Gly Thr Ile Ala Ala Leu Asn Asn  
1 5 10 15

Q1209-30

Q1212-15

Q1212 PPT

Q1212 Artificial Sequence

Q1209

Q128 Description of Artificial Sequence: Synthetic

Q1209-30

Thr His Val Ala Gly Thr Ile Ala Ala Leu Asn Asn Ser Ile Gly  
1 5 10 15

Q1209-31

Q1212-15

Q1212 PPT

Q1212 Artificial Sequence

Q1209

Q128 Description of Artificial Sequence: Synthetic

Q1209-31

Ala Gly Thr Ile Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly  
1 5 10 15

Q1209-32

Q1212-15

Q1212 PPT

Q1212 Artificial Sequence

Q12

Q128 Description of Artificial Sequence: Synthetic

Q1209-32

Ile Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro  
1 5 10 15

Q110- 33  
Q111- 15  
Q112- FFT  
Q113- Artificial Sequence

Q120-  
Q123- Description of Artificial Sequence: Synthetic

Q400- 33  
Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro Ser Ala Glu  
1 5 10 15

Q110- 34  
Q111- 15  
Q112- FFT  
Q113- Artificial Sequence

Q120-  
Q123- Description of Artificial Sequence: Synthetic

Q400- 34  
Ser Ile Gly Val Leu Gly Val Ala Pro Ser Ala Glu Leu Tyr Ala  
1 5 10 15

Q110- 35  
Q111- 15  
Q112- FFT  
Q113- Artificial Sequence

Q120-  
Q123- Description of Artificial Sequence: Synthetic

Q400- 35  
Val Leu Gly Val Ala Pro Ser Ala Glu Leu Tyr Ala Val Lys Val  
1 5 10 15

Q110- 36  
Q111- 15  
Q112- FFT  
Q113- Artificial Sequence

Q120-  
Q123- Description of Artificial Sequence: Synthetic

Q400- 36  
Val Ala Pro Ser Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala  
1 5 10 15

Q110- 37  
Q111- 15  
Q112- FFT  
Q113- Artificial Sequence

Q120-  
Q123- Description of Artificial Sequence: Synthetic

4400- 37  
 Ser Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser  
 1 5 10 15

4210- 38  
 4211- 15  
 4212- PBT  
 4213- Artificial Sequence

4230-  
 4231- Description of Artificial Sequence: Synthetic

4400- 38  
 Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser Gly Ser Val  
 1 5 10 15

4210- 39  
 4211- 15  
 4212- PBT  
 4213- Artificial Sequence

4230-  
 4231- Description of Artificial Sequence: Synthetic

4400- 39  
 Val Lys Val Leu Gly Ala Ser Gly Ser Gly Ser Val Ser Ser Ile  
 1 5 10 15

4210- 40  
 4211- 15  
 4212- PBT  
 4213- Artificial Sequence

4230-  
 4231- Description of Artificial Sequence: Synthetic

4400- 40  
 Leu Gly Ala Ser Gly Ser Gly Ser Val Ser Ser Ile Ala Gln Gly  
 1 5 10 15

4210- 41  
 4211- 15  
 4212- PBT  
 4213- Artificial Sequence

4230-  
 4231- Description of Artificial Sequence: Synthetic

4400- 41  
 Ser Gly Ser Gly Ser Val Ser Ser Ile Ala Gln Gly Leu Glu Trp  
 1 5 10 15

4210- 42  
 4211- 15

02120 PPT  
02110 Artificial Sequence

02121  
02120 Description of Artificial Sequence: Synthetic

04000 42  
Gly Ser Val Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala Gly Asn  
1 5 10 15

02122 43  
02120 15  
02120 PPT  
02120 Artificial Sequence

02123  
02120 Description of Artificial Sequence: Synthetic

04000 43  
Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala Gly Asn Asn Gly Met  
1 5 10 15

02124 44  
02120 15  
02120 PPT  
02120 Artificial Sequence

02125  
02120 Description of Artificial Sequence: Synthetic

04000 44  
Ala Gln Gly Leu Glu Trp Ala Gly Asn Asn Gly Met His Val Ala  
1 5 10 15

02126 45  
02120 15  
02120 PPT  
02120 Artificial Sequence

02127  
02120 Description of Artificial Sequence: Synthetic

04000 45  
Leu Glu Trp Ala Gly Asn Asn Gly Met His Val Ala Asn Leu Ser  
1 5 10 15

02128 46  
02120 15  
02120 PPT  
02120 Artificial Sequence

02129  
02120 Description of Artificial Sequence: Synthetic

04000 46  
Ala Gly Asn Asn Gly Met His Val Ala Asn Leu Ser Leu Gly Ser

1	5	10	15
---	---	----	----

<210> 47  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<214>  
 <215> Description of Artificial Sequence: Synthetic

<400> 47  
 Asn Gly Met His Val Ala Asn Leu Ser Leu Gly Ser Pro Ser Pro  
 1 5 10 15

<210> 48  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<214>  
 <215> Description of Artificial Sequence: Synthetic

<400> 48  
 His Val Ala Asn Leu Ser Leu Gly Ser Pro Ser Pro Ser Ala Thr  
 1 5 10 15

<210> 49  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<214>  
 <215> Description of Artificial Sequence: Synthetic

<400> 49  
 Asn Leu Ser Leu Gly Ser Pro Ser Pro Ser Ala Thr Leu Glu Gln  
 1 5 10 15

<210> 50  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<214>  
 <215> Description of Artificial Sequence: Synthetic

<400> 50  
 Leu Gly Ser Pro Ser Pro Ser Ala Thr Leu Glu Gln Ala Val Asn  
 1 5 10 15

<210> 51  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<110>

<113> Description of Artificial Sequence: Synthetic

<400> 51

Pro Ser Pro Ser Ala Thr Leu Glu Gln Ala Val Asn Ser Ala Thr  
1 5 10 15

<110> 52

<111> 15

<112> PRT

<113> Artificial Sequence

<110>

<113> Description of Artificial Sequence: Synthetic

<400> 53

Ser Ala Thr Leu Glu Gln Ala Val Asn Ser Ala Thr Ser Arg Gly  
1 5 10 15

<110> 53

<111> 15

<112> PRT

<113> Artificial Sequence

<110>

<113> Description of Artificial Sequence: Synthetic

<400> 53

Leu Glu Gln Ala Val Asn Ser Ala Thr Ser Arg Gly Val Leu Val  
1 5 10 15

<110> 54

<111> 15

<112> PRT

<113> Artificial Sequence

<110>

<113> Description of Artificial Sequence: Synthetic

<400> 54

Ala Val Asn Ser Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala  
1 5 10 15

<110> 55

<111> 15

<112> PRT

<113> Artificial Sequence

<110>

<113> Description of Artificial Sequence: Synthetic

<400> 55

Ser Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala Ser Gly Asn  
1 5 10 15

02108 56  
02110 15  
02112 PFT  
02113 Artificial Sequence

02114  
02115 Description of Artificial Sequence: Synthetic

04000 56  
Ser Arg Gly Val Leu Val Val Ala Ala Ser Gly Asn Ser Gly Ala  
1 5 10 15

02116 57  
02118 15  
02120 PFT  
02121 Artificial Sequence

02122  
02123 Description of Artificial Sequence: Synthetic

04000 58  
Val Leu Val Val Ala Ala Ser Gly Asn Ser Gly Ala Gly Ser Ile  
1 5 10 15

02124 59  
02126 15  
02128 PFT  
02129 Artificial Sequence

02130  
02131 Description of Artificial Sequence: Synthetic

04000 59  
Val Ala Ala Ser Gly Asn Ser Gly Ala Gly Ser Ile Ser Tyr Pro  
1 5 10 15

02132 59  
02134 15  
02136 PFT  
02137 Artificial Sequence

02138  
02139 Description of Artificial Sequence: Synthetic

04000 59  
Ser Gly Asn Ser Gly Ala Gly Ser Ile Ser Tyr Pro Ala Arg Tyr  
1 5 10 15

02140 60  
02142 15  
02144 PFT  
02145 Artificial Sequence

02146  
02147 Description of Artificial Sequence: Synthetic

<400> 60  
 Ser Gly Ala Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala  
                           5                          10                          15

<401> 61  
 <411> 15  
 <412> PPT  
 <413> Artificial Sequence

<420>  
 <423> Description of Artificial Sequence: Synthetic

<400> 61  
 Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val  
                           5                          10                          15

<401> 62  
 <411> 15  
 <412> PPT  
 <413> Artificial Sequence

<420>  
 <423> Description of Artificial Sequence: Synthetic

<400> 63  
 Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val Gly Ala Thr  
                           5                          10                          15

<401> 64  
 <411> 15  
 <412> PPT  
 <413> Artificial Sequence

<420>  
 <423> Description of Artificial Sequence: Synthetic

<400> 65  
 Ala Arg Tyr Ala Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn  
                           5                          10                          15

<401> 64  
 <411> 15  
 <412> PPT  
 <413> Artificial Sequence

<420>  
 <423> Description of Artificial Sequence: Synthetic

<400> 64  
 Ala Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg  
                           5                          10                          15

<401> 65  
 <411> 15  
 <412> PPT

# 4213: Artificial Sequence

4200:

4200: Description of Artificial Sequence: Synthetic

4400: 65

Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser Phe  
1 10 15

4210: 66

4211: 15

4212: PFT

4213: Artificial Sequence

4200:

4200: Description of Artificial Sequence: Synthetic

4400: 66

Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser Phe Ser Gln Tyr  
1 5 10 15

4210: 67

4211: 15

4212: PFT

4213: Artificial Sequence

4200:

4200: Description of Artificial Sequence: Synthetic

4400: 61

Asp Gln Asn Asn Asn Arg Ala Ser Phe Ser Gln Tyr Gly Ala Gly  
1 5 10 15

4210: 68

4211: 15

4212: PFT

4213: Artificial Sequence

4200:

4200: Description of Artificial Sequence: Synthetic

4400: 68

Asn Asn Arg Ala Ser Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile  
1 5 10 15

4210: 69

4211: 15

4212: PFT

4213: Artificial Sequence

4200:

4200: Description of Artificial Sequence: Synthetic

4400: 69

Ala Ser Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro  
1 5 10 15

4110- 70  
4111- 15  
4112- PBT  
4113- Artificial Sequence

4220-  
4223- Description of Artificial Sequence: Synthetic

4400- 70  
Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Asn  
1 5 10 15

4114- 71  
4115- 15  
4116- PBT  
4117- Artificial Sequence

4221-  
4223- Description of Artificial Sequence: Synthetic

4400- 71  
Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Asn Val Gln Ser  
1 5 10 15

4118- 71  
4119- 15  
4120- PBT  
4121- Artificial Sequence

4222-  
4223- Description of Artificial Sequence: Synthetic

4400- 72  
Leu Asp Ile Val Ala Pro Gly Val Asn Val Gln Ser Thr Tyr Pro  
1 5 10 15

4122- 73  
4123- 15  
4124- PBT  
4125- Artificial Sequence

4224-  
4223- Description of Artificial Sequence: Synthetic

4400- 73  
Val Ala Pro Gly Val Asn Val Gln Ser Thr Tyr Pro Gly Ser Thr  
1 5 10 15

4219- 74  
4220- 15  
4221- PBT  
4222- Artificial Sequence

4220-

4223- Description of Artificial Sequence: Synthetic

440- 74  
Gly Val Asn Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser  
1 5 10 15

4210- 75  
4211- 15  
4212- PFT  
4213- Artificial Sequence

4214-  
4215- Description of Artificial Sequence: Synthetic

440- 75  
Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Asn Gly  
1 5 10 15

4216- 76  
4217- 15  
4218- PFT  
4219- Artificial Sequence

4220-  
4221- Description of Artificial Sequence: Synthetic

440- 76  
Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Asn Gly Thr Ser Met  
1 5 10 15

4222- 77  
4223- 15  
4224- PFT  
4225- Artificial Sequence

4226-  
4227- Description of Artificial Sequence: Synthetic

440- 77  
Gly Ser Thr Tyr Ala Ser Leu Asn Gly Thr Ser Met Ala Thr Pro  
1 5 10 15

4228- 78  
4229- 15  
4230- PFT  
4231- Artificial Sequence

4232-  
4233- Description of Artificial Sequence: Synthetic

440- 78  
Tyr Ala Ser Leu Asn Gly Thr Ser Met Ala Thr Pro His Val Ala  
1 5 10 15

4210- 79

Q111 15  
Q112 PPT  
Q113 Artificial Sequence

Q114  
Q114 Description of Artificial Sequence: Synthetic

Q400 79  
Leu Asn Gly Thr Ser Met Ala Thr Pro His Val Ala Gly Ala Ala  
1 5 10 15

Q110 80  
Q111 15  
Q112 PPT  
Q113 Artificial Sequence

Q114  
Q114 Description of Artificial Sequence: Synthetic

Q400 80  
Thr Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu Val  
1 5 10 15

Q110 81  
Q111 15  
Q112 PPT  
Q113 Artificial Sequence

Q114  
Q114 Description of Artificial Sequence: Synthetic

Q400 81  
Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu Val Lys Gln Lys  
1 5 10 15

Q110 82  
Q111 15  
Q112 PPT  
Q113 Artificial Sequence

Q114  
Q114 Description of Artificial Sequence: Synthetic

Q400 82  
Gly Val Ala Gly Ala Ala Ala Leu Val Lys Gln Lys Asn Pro Ser  
1 5 10 15

Q110 83  
Q111 15  
Q112 PPT  
Q113 Artificial Sequence

Q114  
Q114 Description of Artificial Sequence: Synthetic

Q400 83

Gly Ala Ala Ala Leu Val Lys Gln Lys Asn Pro Ser Trp Ser Asn  
 . 5 10 15

4210 84  
 4211 15  
 4212 PFT  
 4213 Artificial Sequence

4214  
 4215 Description of Artificial Sequence: Synthetic

4410 84  
 Ala Leu Val Lys Gln Lys Asn Pro Ser Trp Ser Asn Val Gln Ile  
 . 5 10 15

4411 85  
 4412 15  
 4413 PFT  
 4414 Artificial Sequence

4415  
 4416 Description of Artificial Sequence: Synthetic

4417 85  
 Lys Gln Lys Asn Pro Ser Trp Ser Val Asn Gln Ile Arg Asn His  
 . 5 10 15

4418 86  
 4419 15  
 4420 PFT  
 4421 Artificial Sequence

4422  
 4423 Description of Artificial Sequence: Synthetic

4424 86  
 Asn Pro Ser Trp Ser Asn Val Gln Ile Arg Asn His Leu Lys Asn  
 . 5 10 15

4425 87  
 4426 15  
 4427 PFT  
 4428 Artificial Sequence

4429  
 4430 Description of Artificial Sequence: Synthetic

4431 87  
 Trp Ser Asn Val Gln Ile Arg Asn His Leu Lys Asn Thr Ala Thr  
 . 1 5 10 15

4432 88  
 4433 15  
 4434 PFT  
 4435 Artificial Sequence

4100

4100 Description of Artificial Sequence: Synthetic

4100 88

Val Gln Ile Arg Asn His Leu Lys Asn Thr Ala Thr Ser Leu Gly  
1 5 10 15

4100 89

4100 15

4100 PPT

4100 Artificial Sequence

4200

4200 Description of Artificial Sequence: Synthetic

4200 89

Arg Asn His Leu Lys Asn Thr Ala Thr Ser Leu Gly Ser Thr Asn  
1 5 10 15

4200 90

4200 15

4200 PPT

4200 Artificial Sequence

4300

4300 Description of Artificial Sequence: Synthetic

4300 90

Leu Lys Asn Thr Ala Thr Ser Leu Gly Ser Thr Asn Leu Tyr Gly  
1 5 10 15

4300 91

4300 15

4300 PPT

4300 Artificial Sequence

4400

4400 Description of Artificial Sequence: Synthetic

4400 91

Thr Ala Thr Ser Leu Gly Ser Thr Asn Leu Tyr Gly Ser Gly Leu  
1 5 10 15

4400 92

4400 15

4400 PPT

4400 Artificial Sequence

4500

4500 Description of Artificial Sequence: Synthetic

4500 92

Ser Leu Gly Ser Thr Asn Leu Tyr Gly Ser Gly Leu Val Asn Ala  
1 5 10 15

42100-93  
42110-15  
42120-PET  
42130-Artificial Sequence

42100-  
42130-Description of Artificial Sequence: Synthetic

44000-93  
Ser Thr Asn Leu Tyr Gly Ser Gly Leu Val Asn Ala Glu Ala Ala  
1 5 10 15

42100-94  
42110-15  
42120-PET  
42130-Artificial Sequence

42100-  
42130-Description of Artificial Sequence: Synthetic

44000-94  
Asn Leu Tyr Gly Ser Gly Leu Val Asn Ala Glu Ala Ala Thr Arg  
1 5 10 15

42100-95  
42110-15  
42120-PET  
42130-Artificial Sequence

42100-  
42130-Description of Artificial Sequence: Synthetic

44000-95  
Asp Ala Glu Leu His Ile Phe Arg Val Phe Thr Asn Asn Gln Val  
1 5 10 15

42100-96  
42110-15  
42120-PET  
42130-Artificial Sequence

42100-  
42130-Description of Artificial Sequence: Synthetic

44000-96  
Pro Leu Arg Arg Ala Ser Leu Ser Leu Gly Ser Gly Phe Trp His  
1 5 10 15

42100-97  
42110-15  
42120-PET  
42130-Artificial Sequence

42100-  
42230-Description of Artificial Sequence: Synthetic

<400> 97  
 Arg Ala Ser Leu Ser Leu Gly Ser Gly Phe Trp His Ala Thr Gly  
 1 5 10 15

<210> 98  
 <211> 15  
 <212> PFT  
 <213> Artificial Sequence

<214>  
 <215> Description of Artificial Sequence: Synthetic

<400> 98  
 Leu Ser Leu Gly Ser Gly Phe Trp His Ala Thr Gly Arg His Ser  
 1 5 10 15

<210> 99  
 <211> 15  
 <212> PFT  
 <213> Artificial Sequence

<214>  
 <215> Description of Artificial Sequence: Synthetic

<400> 99  
 Gly Ser Gly Phe Trp His Ala Thr Gly Arg His Ser Ser Arg Arg  
 1 5 10 15

<210> 100  
 <211> 15  
 <212> PFT  
 <213> Artificial Sequence

<214>  
 <215> Description of Artificial Sequence: Synthetic

<400> 100  
 Phe Trp His Ala Thr Gly Arg His Ser Ser Arg Arg Leu Leu Arg  
 1 5 10 15

<210> 101  
 <211> 15  
 <212> PFT  
 <213> Artificial Sequence

<214>  
 <215> Description of Artificial Sequence: Synthetic

<400> 101  
 Ala Thr Gly Arg His Ser Ser Arg Arg Leu Leu Arg Ala Ile Pro  
 1 5 10 15

<210> 102  
 <211> 15

02128 PPT  
02128 Artificial Sequence

02128  
02128 Description of Artificial Sequence: Synthetic

02128-102  
Arg His Ser Ser Arg Arg Leu Leu Arg Ala Ile Pro Arg Gln Val  
1 5 10 15

02128-103  
02128-15  
02128 PPT  
02128 Artificial Sequence

02128  
02128 Description of Artificial Sequence: Synthetic

02128-103  
Ser Arg Arg Leu Leu Arg Ala Ile Pro Arg Gln Val Ala Gln Thr  
1 5 10 15

02128-104  
02128-15  
02128 PPT  
02128 Artificial Sequence

02128  
02128 Description of Artificial Sequence: Synthetic

02128-104  
Leu Leu Arg Ala Ile Pro Arg Gln Val Ala Gln Thr Leu Gln Ala  
1 5 10 15

02128-105  
02128-15  
02128 PPT  
02128 Artificial Sequence

02128  
02128 Description of Artificial Sequence: Synthetic

02128-105  
Ala Ile Pro Arg Gln Val Ala Gln Thr Leu Gln Ala Asp Val Leu  
1 5 10 15

02128-106  
02128-15  
02128 PPT  
02128 Artificial Sequence

02128  
02128 Description of Artificial Sequence: Synthetic

02128-106  
Arg Gln Val Ala Gln Thr Leu Gln Ala Asp Val Leu Trp Gln Met

1	5	10	15
---	---	----	----

<210> 107  
 <211> 15  
 <212> PFT  
 <213> Artificial Sequence  
  
 <220>  
 <221> Description of Artificial Sequence: Synthetic  
  
 <400> 107  
 Ala Gln Thr Leu Gln Ala Asp Val Leu Trp Gln Met Gly Tyr Thr  
       1                  5                  10                  15

<210> 108  
 <211> 15  
 <212> PFT  
 <213> Artificial Sequence  
  
 <220>  
 <221> Description of Artificial Sequence: Synthetic  
  
 <400> 108  
 Leu Gln Ala Asp Val Leu Trp Gln Met Gly Tyr Thr Gly Ala Asn  
       1                  5                  10                  15

<210> 109  
 <211> 15  
 <212> PFT  
 <213> Artificial Sequence  
  
 <220>  
 <221> Description of Artificial Sequence: Synthetic  
  
 <400> 109  
 Asp Val Leu Trp Gln Met Gly Tyr Thr Gly Ala Asn Val Arg Val  
       1                  5                  10                  15

<210> 110  
 <211> 15  
 <212> PFT  
 <213> Artificial Sequence  
  
 <220>  
 <221> Description of Artificial Sequence: Synthetic  
  
 <400> 110  
 Trp Gln Met Gly Tyr Thr Gly Ala Asn Val Arg Val Ala Val Phe  
       1                  5                  10                  15

<210> 111  
 <211> 15  
 <212> PFT  
 <213> Artificial Sequence

<220>  
<220> Description of Artificial Sequence: Synthetic

<41> 111  
Gly Tyr Thr Gly Ala Asn Val Arg Val Ala Val Phe Asp Thr Gly  
1 5 10 15

<210> 112  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<220> Description of Artificial Sequence: Synthetic

<41> 112  
Gly Ala Asn Val Arg Val Ala Val Phe Asp Thr Gly Leu Ser Glu  
1 5 10 15

<210> 113  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<220> Description of Artificial Sequence: Synthetic

<400> 113  
Val Arg Val Ala Val Phe Asp Thr Gly Leu Ser Glu Lys His Pro  
1 5 10 15

<210> 114  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<220> Description of Artificial Sequence: Synthetic

<400> 114  
Ala Val Phe Asp Thr Gly Leu Ser Glu Lys His Pro His Phe Lys  
1 5 10 15

<210> 115  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<220> Description of Artificial Sequence: Synthetic

<400> 115  
Asp Thr Gly Leu Ser Glu Lys His Pro His Phe Lys Asn Val Lys  
1 5 10 15

<210> 116  
<11> 15  
<11> PRT  
<11> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 116  
Leu Ser Glu Lys His Pro His Phe Lys Asn Val Lys Glu Arg Thr  
1 5 10 15

<210> 117  
<11> 15  
<11> PRT  
<11> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 117  
Lys His Pro His Phe Lys Asn Val Lys Glu Arg Thr Asn Trp Thr  
1 5 10 15

<210> 118  
<11> 15  
<11> PRT  
<11> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 118  
His Phe Lys Asn Val Lys Glu Arg Thr Asn Trp Thr Asn Glu Arg  
1 5 10 15

<210> 119  
<11> 15  
<11> PRT  
<11> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 119  
Asn Val Lys Glu Arg Thr Asn Trp Thr Asn Glu Arg Thr Leu Asp  
1 5 10 15

<210> 120  
<11> 15  
<11> PRT  
<11> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

0400> 120  
 Glu Arg Thr Asn Trp Thr Asn Glu Arg Thr Leu Asp Asp Gly Leu  
 1 5 10 15

0210> 121  
 0211> 15  
 0212> PPT  
 0213> Artificial Sequence

0220>  
 0223> Description of Artificial Sequence: Synthetic

0400> 121  
 Asn Trp Thr Asn Glu Arg Thr Leu Asp Asp Gly Leu Gly His Gly  
 1 5 10 15

0210> 122  
 0211> 15  
 0212> PPT  
 0213> Artificial Sequence

0220>  
 0223> Description of Artificial Sequence: Synthetic

0400> 122  
 Asn Glu Arg Thr Leu Asp Asp Gly Leu Gly His Gly Thr Phe Val  
 1 5 10 15

0210> 123  
 0211> 15  
 0212> PPT  
 0213> Artificial Sequence

0220>  
 0223> Description of Artificial Sequence: Synthetic

0400> 123  
 Thr Leu Asp Asp Gly Leu Gly His Gly Thr Phe Val Ala Gly Val  
 1 5 10 15

0210> 124  
 0211> 15  
 0212> PPT  
 0213> Artificial Sequence

0220>  
 0223> Description of Artificial Sequence: Synthetic

0400> 124  
 Asp Gly Leu Gly His Gly Thr Phe Val Ala Gly Val Ile Ala Ser  
 1 5 10 15

0210> 125  
 0211> 15  
 0212> PPT

<213> Artificial Sequence

<210>

<213> Description of Artificial Sequence: Synthetic

<400> 125

Gly His Gly Thr Phe Val Ala Gly Val Ile Ala Ser Met Arg Glu  
1 5 10 15

<210> 126

<211> 15

<212> PPT

<213> Artificial Sequence

<210>

<213> Description of Artificial Sequence: Synthetic

<400> 126

Thr Phe Val Ala Gly Val Ile Ala Ser Met Arg Glu Cys Gln Gly  
1 5 10 15

<210> 127

<211> 15

<212> PPT

<213> Artificial Sequence

<210>

<213> Description of Artificial Sequence: Synthetic

<400> 127

Ala Gly Val Ile Ala Ser Met Arg Glu Cys Gln Gly Phe Ala Pro  
1 5 10 15

<210> 128

<211> 15

<212> PPT

<213> Artificial Sequence

<210>

<213> Description of Artificial Sequence: Synthetic

<400> 128

Ile Ala Ser Met Arg Glu Cys Gln Gly Phe Ala Pro Asp Ala Glu  
1 5 10 15

<210> 129

<211> 15

<212> PPT

<213> Artificial Sequence

<210>

<213> Description of Artificial Sequence: Synthetic

<400> 129

Met Arg Glu Cys Gln Gly Phe Ala Pro Asp Ala Glu Leu His Ile  
1 5 10 15

<210> 120

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<221> Description of Artificial Sequence: Synthetic

<400> 130

Cys Gln Gly Phe Ala Pro Asp Ala Glu Leu His Ile Phe Arg Val  
1 5 10 15

<210> 131

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<221> Description of Artificial Sequence: Synthetic

<400> 131

Phe Ala Pro Asp Ala Glu Leu His Ile Phe Arg Val Phe Thr Asn  
1 5 10 15

<210> 132

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<221> Description of Artificial Sequence: Synthetic

<400> 132

Asp Ala Glu Leu His Ile Phe Arg Val Phe Thr Asn Asn Gln Val  
1 5 10 15

<210> 133

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<221> Description of Artificial Sequence: Synthetic

<400> 133

Leu His Ile Phe Arg Val Phe Thr Asn Asn Gln Val Ser Tyr Thr  
1 5 10 15

<210> 134

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

4223> Description of Artificial Sequence: Synthetic

440> 134

Phe Arg Val Phe Thr Asn Asn Gln Val Ser Tyr Thr Ser Trp Phe  
1 5 10 15

4210> 135

4211> 15

4212> PPT

4213> Artificial Sequence

4220>

4223> Description of Artificial Sequence: Synthetic

440> 135

Thr Thr Asn Asn Gln Val Ser Tyr Thr Ser Trp Phe Leu Asp Ala  
1 5 10 15

4210> 136

4211> 15

4212> PPT

4213> Artificial Sequence

4220>

4223> Description of Artificial Sequence: Synthetic

440> 136

Asn Gln Val Ser Tyr Thr Ser Trp Phe Leu Asp Ala Phe Asn Tyr  
1 5 10 15

4210> 137

4211> 15

4212> PPT

4213> Artificial Sequence

4220>

4223> Description of Artificial Sequence: Synthetic

440> 137

Ser Tyr Thr Ser Trp Phe Leu Asp Ala Phe Asn Tyr Ala Ile Leu  
1 5 10 15

4210> 138

4211> 15

4212> PPT

4213> Artificial Sequence

4220>

4223> Description of Artificial Sequence: Synthetic

440> 138

Ser Trp Phe Leu Asp Ala Phe Asn Tyr Ala Ile Leu Lys Lys Ile  
1 5 10 15

4210> 139

62110 15  
62112 PPT  
62113 Artificial Sequence

62114  
62114 Description of Artificial Sequence: Synthetic

64000 139  
Leu Asp Ala Phe Asn Tyr Ala Ile Leu Lys Lys Ile Asp Val Leu  
1 5 10 15

62110 140  
62112 15  
62113 PPT  
62114 Artificial Sequence

62115  
62115 Description of Artificial Sequence: Synthetic

64000 140  
Phe Asn Tyr Ala Ile Leu Lys Lys Ile Asp Val Leu Asn Leu Ser  
1 5 10 15

62110 141  
62112 15  
62113 PPT  
62114 Artificial Sequence

62115  
62115 Description of Artificial Sequence: Synthetic

64000 141  
Ala Ile Leu Lys Lys Ile Asp Val Leu Asn Leu Ser Ile Gly Gly  
1 5 10 15

62110 142  
62112 15  
62113 PPT  
62114 Artificial Sequence

62115  
62115 Description of Artificial Sequence: Synthetic

64000 142  
Lys Lys Ile Asp Val Leu Asn Leu Ser Ile Gly Gly Pro Asp Phe  
1 5 10 15

62110 143  
62112 15  
62113 PPT  
62114 Artificial Sequence

62115  
62115 Description of Artificial Sequence: Synthetic

64000 143

Asp Val Leu Asn Leu Ser Ile Gly Gly Pro Asp Phe Met Asp His  
 1 5 10 15

<210> 144  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 144  
 Asn Leu Ser Ile Gly Gly Pro Asp Phe Met Asp His Pro Phe Val  
 1 5 10 15

<210> 145  
 <211> 11  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 145  
 Ile Gly Gly Pro Asp Phe Met Asp His Pro Phe Val Asp Lys Val  
 1 5 10 15

<210> 146  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 146  
 Pro Asp Phe Met Asp His Pro Phe Val Asp Lys Val Trp Glu Leu  
 1 5 10 15

<210> 147  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic

<400> 147  
 Met Asp His Pro Phe Val Asp Lys Val Trp Glu Leu Thr Ala Asn  
 1 5 10 15

<210> 148  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<210> 148

Pro Phe Val Asp Lys Val Trp Glu Leu Thr Ala Asn Asn Val Ile  
1 5 10 15

<210> 149

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<210> 149

Asp Lys Val Trp Glu Leu Thr Ala Asn Asn Val Ile Met Val Ser  
1 5 10 15

<210> 150

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<210> 150

Trp Glu Leu Thr Ala Asn Asn Val Ile Met Val Ser Ala Ile Gly  
1 5 10 15

<210> 151

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<210> 151

Thr Ala Asn Asn Val Ile Met Val Ser Ala Ile Gly Asn Asp Gly  
1 5 10 15

<210> 152

<211> 15

<212> PPT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<210> 152

Asn Val Ile Met Val Ser Ala Ile Gly Asn Asp Gly Pro Leu Tyr  
1 5 10 15

Q10- 153  
Q11- 15  
Q12- PBT  
Q13- Artificial Sequence

Q10-

Q13- Description of Artificial Sequence: Synthetic

Q10- 153

Met Val Ser Ala Ile Gly Asn Asp Gly Pro Leu Tyr Gly Thr Ile  
1 5 10 15

Q10- 154

Q11- 15

Q12- PBT

Q13- Artificial Sequence

Q10-

Q13- Description of Artificial Sequence: Synthetic

Q10- 154

Ala Ile Gly Asn Asp Gly Pro Leu Tyr Gly Thr Leu Asn Asn Pro  
1 5 10 15

Q10- 155

Q11- 15

Q12- PBT

Q13- Artificial Sequence

Q10-

Q13- Description of Artificial Sequence: Synthetic

Q10- 155

Asn Asp Gly Pro Leu Tyr Gly Thr Leu Asn Asn Pro Ala Asp Gln  
1 5 10 15

Q10- 156

Q11- 15

Q12- PBT

Q13- Artificial Sequence

Q10-

Q13- Description of Artificial Sequence: Synthetic

Q10- 156

Pro Leu Tyr Gly Thr Leu Asn Asn Pro Ala Asp Gln Met Asp Val  
1 5 10 15

Q10- 157

Q11- 15

Q12- PBT

Q13- Artificial Sequence

Q10-

Q13- Description of Artificial Sequence: Synthetic

<400> 157  
 Gly Thr Leu Asn Asn Pro Ala Asp Gln Met Asp Val Ile Gly Val  
 5 10 15

<410> 158  
 <411> 15  
 <412> PFT  
 <413> Artificial Sequence

<420>  
 <421> Description of Artificial Sequence: Synthetic

<400> 158  
 Asn Asn Pro Ala Asp Gln Met Asp Val Ile Gly Val Gly Gly Ile  
 5 10 15

<410> 159  
 <411> 15  
 <412> PFT  
 <413> Artificial Sequence

<420>  
 <421> Description of Artificial Sequence: Synthetic

<400> 159  
 Ala Asp Gln Met Asp Val Ile Gly Val Gly Gly Ile Asp Phe Glu  
 5 10 15

<410> 160  
 <411> 15  
 <412> PFT  
 <413> Artificial Sequence

<420>  
 <421> Description of Artificial Sequence: Synthetic

<400> 160  
 Met Asp Val Ile Gly Val Gly Gly Ile Asp Phe Glu Asp Asn Ile  
 5 10 15

<410> 161  
 <411> 15  
 <412> PFT  
 <413> Artificial Sequence

<420>  
 <421> Description of Artificial Sequence: Synthetic

<400> 161  
 Ile Gly Val Gly Gly Ile Asp Phe Glu Asp Asn Ile Ala Arg Phe  
 1 5 10 15

<410> 162  
 <411> 15

<211> PPT  
<212> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 162  
Gly Gly Ile Asp Phe Glu Asp Asn Ile Ala Arg Phe Ser Ser Arg  
1 5 10 15

<211> 163  
<212> 15  
<213> PPT  
<214> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 163  
Asp Phe Glu Asp Asn Ile Ala Arg Phe Ser Ser Arg Gly Met Thr  
1 5 10 15

<211> 164  
<212> 15  
<213> PPT  
<214> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 164  
Asp Asn Ile Ala Arg Phe Ser Ser Arg Gly Met Thr Thr Trp Glu  
1 5 10 15

<211> 165  
<212> 15  
<213> PPT  
<214> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 165  
Ala Arg Phe Ser Ser Arg Gly Met Thr Thr Trp Glu Leu Pro Gly  
1 5 10 15

<211> 166  
<212> 15  
<213> PPT  
<214> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 166  
Ser Ser Arg Gly Met Thr Thr Trp Glu Leu Pro Gly Gly Tyr Gly



<220>

<223> Description of Artificial Sequence: Synthetic

<400> 171

Arg Met Lys Pro Asp Ile Val Thr Tyr Gly Ala Gly Val Arg Gly  
1 5 10 15

<400> 172

<411> 15

<412> PPT

<413> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 172

Pro Asp Ile Val Thr Tyr Gly Ala Gly Val Arg Gly Ser Gly Val  
1 5 10 15

<400> 173

<411> 15

<412> PPT

<413> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 173

Val Thr Tyr Gly Ala Gly Val Arg Gly Ser Gly Val Lys Gly Gly  
1 5 10 15

<400> 174

<411> 15

<412> PPT

<413> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 174

Gly Ala Gly Val Arg Gly Ser Gly Val Lys Gly Gly Cys Arg Ala  
1 5 10 15

<400> 175

<411> 15

<412> PPT

<413> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 175

Val Arg Gly Ser Gly Val Lys Gly Gly Cys Arg Ala Leu Ser Gly  
1 5 10 15

02100 176  
02110 15  
02120 PFT  
02130 Artificial Sequence

02140  
02150 Description of Artificial Sequence: Synthetic

04000 176  
Ser Gly Val Lys Gly Gly Cys Arg Ala Leu Ser Gly Thr Ser Val  
1 5 10 15

02160 177  
02170 15  
02180 PFT  
02190 Artificial Sequence

02200  
02210 Description of Artificial Sequence: Synthetic

04000 177  
Lys Gly Gly Cys Arg Ala Leu Ser Gly Thr Ser Val Ala Ser Pro  
1 5 10 15

02220 178  
02230 15  
02240 PFT  
02250 Artificial Sequence

02260  
02270 Description of Artificial Sequence: Synthetic

04000 178  
Lys Arg Ala Leu Ser Gly Thr Ser Val Ala Ser Pro Val Val Ala  
1 5 10 15

02280 179  
02290 15  
02300 PFT  
02310 Artificial Sequence

02320  
02330 Description of Artificial Sequence: Synthetic

04000 179  
Leu Ser Gly Thr Ser Val Ala Ser Pro Val Val Ala Gly Ala Val  
1 5 10 15

02340 180  
02350 15  
02360 PFT  
02370 Artificial Sequence

02380  
02390 Description of Artificial Sequence: Synthetic

44000 180  
 Thr Ser Val Ala Ser Pro Val Val Ala Gly Ala Val Thr Leu Leu  
                                   5                                  10                                  15

44100 181  
 44110 15  
 44120 PFT  
 44130 Artificial Sequence

44200  
 44230 Description of Artificial Sequence: Synthetic

44000 181  
 Ala Ser Pro Val Val Ala Gly Ala Val Thr Leu Leu Val Ser Thr  
                                   5                                  10                                  15

44100 182  
 44110 15  
 44120 PFT  
 44130 Artificial Sequence

44200  
 44230 Description of Artificial Sequence: Synthetic

44000 182  
 Val Val Ala Gly Ala Val Thr Leu Leu Val Ser Thr Val Gln Lys  
                                   5                                  10                                  15

44100 183  
 44110 15  
 44120 PFT  
 44130 Artificial Sequence

44200  
 44230 Description of Artificial Sequence: Synthetic

44000 183  
 Gly Ala Val Thr Leu Leu Val Ser Thr Val Gln Lys Arg Glu Leu  
                                   5                                  10                                  15

44100 184  
 44110 15  
 44120 PFT  
 44130 Artificial Sequence

44200  
 44230 Description of Artificial Sequence: Synthetic

44000 184  
 Thr Leu Leu Val Ser Thr Val Gln Lys Arg Glu Leu Val Asn Pro  
                                   5                                  10                                  15

44100 185  
 44110 15  
 44120 PFT

4213- Artificial Sequence

420-

423- Description of Artificial Sequence: Synthetic

440- 185

Val	Ser	Thr	Val	Gln	Lys	Arg	Glu	Leu	Val	Asn	Pro	Ala	Ser	Met
1				5				10						15

4210- 186

4211- 15

4212- PFT

4213- Artificial Sequence

420-

423- Description of Artificial Sequence: Synthetic

4400- 186

Val	Gln	Lys	Arg	Glu	Leu	Val	Asn	Pro	Ala	Ser	Met	Lys	Gln	Ala
1				5				10						15

4210- 187

4211- 15

4212- PFT

4213- Artificial Sequence

420-

423- Description of Artificial Sequence: Synthetic

440- 187

Arg	Glu	Leu	Val	Asn	Pro	Ala	Ser	Met	Lys	Gln	Ala	Leu	Ile	Ala
1				5				10						15

4210- 188

4211- 15

4212- PFT

4213- Artificial Sequence

420-

423- Description of Artificial Sequence: Synthetic

440- 188

Val	Asn	Pro	Ala	Ser	Met	Lys	Gln	Ala	Leu	Ile	Ala	Ser	Ala	Arg
1				5				10						15

4210- 189

4211- 15

4212- PFT

4213- Artificial Sequence

420-

423- Description of Artificial Sequence: Synthetic

440- 189

Ala	Ser	Met	Lys	Gln	Ala	Leu	Ile	Ala	Ser	Ala	Arg	Arg	Leu	Pro
1				5				10						15

<100> 190  
<110> 15  
<115> PPT  
<130> Artificial Sequence

<200>  
<220> Description of Artificial Sequence: Synthetic

<400> 190  
Lys Gln Ala Leu Ile Ala Ser Ala Arg Arg Leu Pro Gly Val Asn  
1 5 10 15

<100> 191  
<110> 15  
<115> PPT  
<130> Artificial Sequence

<200>  
<220> Description of Artificial Sequence: Synthetic

<400> 191  
Leu Ile Ala Ser Ala Arg Arg Leu Pro Gly Val Asn Met Phe Glu  
1 5 10 15

<100> 192  
<110> 15  
<115> PPT  
<130> Artificial Sequence

<200>  
<220> Description of Artificial Sequence: Synthetic

<400> 192  
Ser Ala Arg Arg Leu Pro Gly Val Asn Met Phe Glu Gln Gly His  
1 5 10 15

<100> 193  
<110> 15  
<115> PPT  
<130> Artificial Sequence

<200>  
<220> Description of Artificial Sequence: Synthetic

<400> 193  
Arg Leu Pro Gly Val Asn Met Phe Glu Gln Gly His Gly Lys Leu  
1 5 10 15

<100> 194  
<110> 15  
<115> PPT  
<130> Artificial Sequence

<220>

4210- Description of Artificial Sequence: Synthetic

4400- 194

Gly Val Asn Met Phe Glu Gln Gly His Gly Lys Leu Asp Leu Leu  
1 5 10 15

4410- 195

4411- 15

4412- PPT

4413- Artificial Sequence

4420-

4420- Description of Artificial Sequence: Synthetic

4430- 195

Met Phe Glu Gln Gly His Gly Lys Leu Asp Leu Leu Arg Ala Tyr  
1 5 10 15

4440- 196

4441- 15

4442- PPT

4443- Artificial Sequence

4450-

4450- Description of Artificial Sequence: Synthetic

4460- 196

Gln Gly His Gly Lys Leu Asp Leu Leu Arg Ala Tyr Gln Ile Leu  
1 5 10 15

4470- 197

4471- 15

4472- PPT

4473- Artificial Sequence

4480-

4480- Description of Artificial Sequence: Synthetic

4490- 197

Gly Lys Leu Asp Leu Leu Arg Ala Tyr Gln Ile Leu Asn Ser Tyr  
1 5 10 15

4500- 198

4501- 15

4502- PPT

4503- Artificial Sequence

4510-

4510- Description of Artificial Sequence: Synthetic

4520- 198

Asp Leu Leu Arg Ala Tyr Gln Ile Leu Asn Ser Tyr Lys Pro Gln  
1 5 10 15

4530- 199

<211> 15  
<212> PFT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 199  
Arg Ala Tyr Gln Ile Leu Asn Ser Tyr Lys Pro Gln Ala Ser Leu  
1 5 10 15

<211> 100  
<212> 15  
<213> PFT  
<214> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 200  
Gln Ile Leu Asn Ser Tyr Lys Pro Gln Ala Ser Leu Ser Pro Ser  
1 5 10 15

<211> 101  
<212> 15  
<213> PFT  
<214> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 201  
Asn Ser Tyr Lys Pro Gln Ala Ser Leu Ser Pro Ser Tyr Ile Asp  
1 5 10 15

<211> 102  
<212> 15  
<213> PFT  
<214> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 202  
Lys Pro Gln Ala Ser Leu Ser Pro Ser Tyr Ile Asp Leu Thr Glu  
1 5 10 15

<211> 213  
<212> 15  
<213> PFT  
<214> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 203

Ala Ser Leu Ser Pro Ser Tyr Ile Asp Leu Thr Glu Cys Pro Tyr  
 1 3 10 15

<210> 204

<211> 15

<212> PFT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 104

Ser Pro Ser Tyr Ile Asp Leu Thr Glu Cys Pro Tyr Met Trp Pro  
 1 3 10 15

<210> 105

<211> 15

<212> PFT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 115

Tyr Ile Asp Leu Thr Glu Cys Pro Tyr Met Trp Pro Tyr Cys Ser  
 1 3 10 15

<210> 116

<211> 15

<212> PFT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 116

Leu Thr Glu Cys Pro Tyr Met Trp Pro Tyr Cys Ser Gln Pro Ile  
 1 5 10 15

<210> 117

<211> 15

<212> PFT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

<400> 117

Cys Pro Tyr Met Trp Pro Tyr Cys Ser Gln Pro Ile Tyr Tyr Gly  
 1 5 10 15

<210> 118

<211> 1352

<212> PFT

<213> Homo sapiens

4400> 208

Met	Lys	Leu	Val	Asn	Ile	Trp	Leu	Leu	Leu	Leu	Val	Val	Leu	Leu	Cys
1				5					10					15	
Gly	Lys	Lys	His	Leu	Gly	Asp	Arg	Leu	Glu	Lys	Lys	Ser	Phe	Glu	Lys
			20					25					30		
Ala	Pro	Cys	Pro	Gly	Cys	Ser	His	Leu	Thr	Leu	Lys	Val	Glu	Phe	Ser
		35					40					45			
Ser	Thr	Val	Val	Glu	Tyr	Glu	Tyr	Ile	Val	Ala	Phe	Asn	Gly	Tyr	Phe
	50					55					60				
Thr	Ala	Lys	Ala	Arg	Asn	Ser	Phe	Ile	Ser	Ser	Ala	Leu	Lys	Ser	Ser
65					70					75					80
Glu	Val	Asp	Asn	Trp	Arg	Ile	Ile	Pro	Arg	Asn	Asn	Pro	Ser	Ser	Asp
			85					90						95	
Tyr	Pro	Ser	Asp	Phe	Glu	Val	Ile	Gln	Ile	Lys	Glu	Lys	Gln	Lys	Ala
			100					105					110		
Gly	Leu	Leu	Thr	Leu	Glu	Asp	His	Pro	Asn	Ile	Lys	Arg	Val	Thr	Pro
	115						120					125			
Gln	Arg	Lys	Val	Phe	Arg	Ser	Leu	Lys	Tyr	Ala	Glu	Ser	Asp	Pro	Thr
	130					135					140				
Val	Pro	Cys	Asn	Glu	Thr	Arg	Trp	Ser	Gln	Lys	Trp	Gln	Ser	Ser	Arg
145					150					155					160
Pro	Leu	Arg	Arg	Ala	Ser	Leu	Ser	Leu	Gly	Ser	Gly	Phe	Trp	His	Ala
				165					170					175	
Thr	Gly	Arg	His	Ser	Ser	Arg	Arg	Leu	Leu	Arg	Ala	Ile	Pro	Arg	Gln
		180						185					190		
Val	Ala	Gln	Thr	Leu	Gln	Ala	Asp	Val	Leu	Trp	Gln	Met	Gly	Tyr	Thr
	195						200					205			
Gly	Ala	Asn	Val	Arg	Val	Ala	Val	Phe	Asp	Thr	Gly	Leu	Ser	Gln	Lys
	210					215					220				
His	Pro	His	Phe	Lys	Asn	Val	Lys	Gln	Arg	Thr	Asn	Trp	Thr	Asn	Glu
225					230					235					240
Arg	Thr	Leu	Asp	Asp	Gly	Leu	Gly	His	Gly	Thr	Phe	Val	Ala	Gly	Val
			245						250					255	
Ile	Ala	Ser	Met	Arg	Glu	Lys	Gln	Gly	Phe	Ala	Pro	Asp	Ala	Glu	Leu
		260						265					270		
His	Ile	Phe	Arg	Val	Phe	Thr	Asn	Asn	Gln	Val	Ser	Tyr	Thr	Ser	Trp
		275					280					285			
Phe	Leu	Asp	Ala	Phe	Asn	Tyr	Ala	Ile	Leu	Lys	Lys	Ile	Asp	Val	Leu
	290					295					300				
Asn	Leu	Ser	Ile	Gly	Gly	Pro	Asp	Phe	Met	Asp	His	Pro	Phe	Val	Asp

315		310		315		320
Lys Val Trp Glu Leu Thr Ala Asn Asn Val Ile Met Val Ser Ala Ile						
	325			330		335
Gly Asn Asp Gly Pro Leu Tyr Gly Thr Leu Asn Asn Pro Ala Asp Gln						
	340			345		350
Met Asp Val Ile Gly Val Gly Gly Ile Asp Phe Glu Asp Asn Ile Ala						
	355			360		365
Arg Phe Ser Ser Arg Gly Met Thr Thr Trp Glu Leu Pro Gly Gly Tyr						
	370			375		380
Gly Arg Met Lys Pro Asp Ile Val Thr Tyr Gly Ala Gly Val Arg Gly						
	385			390		400
Ser Gly Val Lys Gly Gly Cys Arg Ala Leu Ser Gly Thr Ser Val Ala						
	405			410		415
Ser Pro Val Val Ala Gly Ala Val Thr Leu Leu Val Ser Thr Val Gln						
	420			425		430
Lys Arg Glu Leu Val Asn Pro Ala Ser Met Lys Gln Ala Leu Ile Ala						
	435			440		445
Ser Ala Arg Arg Leu Pro Gly Val Asn Met Phe Glu Gln Gly His Gly						
	450			455		460
Lys Leu Asp Leu Leu Arg Ala Tyr Gln Ile Leu Asn Ser Tyr Lys Pro						
	465			470		475
Gln Ala Ser Leu Ser Pro Ser Tyr Ile Asp Leu Thr Gln Cys Pro Tyr						
	480			485		490
Met Trp Pro Tyr Cys Ser Gln Pro Ile Tyr Tyr Gly Gly Met Pro Thr						
	500			505		510
Val Val Asn Val Thr Ile Leu Asn Gly Met Gly Val Thr Gly Arg Ile						
	515			520		525
Val Asp Lys Pro Asp Trp Gln Pro Tyr Leu Pro Gln Asn Gly Asp Asn						
	530			535		540
Ile Glu Val Ala Phe Ser Tyr Ser Ser Val Leu Trp Pro Trp Ser Gly						
	545			550		555
Tyr Leu Ala Ile Ser Ile Ser Val Thr Lys Lys Ala Ala Ser Trp Gln						
	560			565		570
Gly Ile Ala Gln Gly His Val Met Ile Thr Val Ala Ser Pro Ala Gln						
	575			580		585
Thr Glu Ser Lys Asn Gly Ala Gln Gln Thr Ser Thr Val Lys Leu Pro						
	590			595		600
Ile Lys Val Lys Ile Ile Pro Thr Pro Pro Arg Ser Lys Arg Val Leu						
	605			610		615
Trp Asp Gln Tyr His Asn Leu Arg Tyr Pro Pro Gly Tyr Phe Pro Arg						

625	630	635	640
Asp Asn Leu Arg Met Lys Asn Asp Pro Leu Asp Trp Asn Gly Asp His	645	650	655
Ile His Thr Asn Phe Arg Asp Met Tyr Gln His Leu Arg Ser Met Gly	660	665	670
Tyr Phe Val Glu Val Leu Gly Ala Pro Phe Thr Cys Phe Asp Ala Ser	675	680	685
Gln Tyr Gly Thr Leu Leu Met Val Asp Ser Glu Glu Glu Tyr Phe Pro	690	695	700
Glu Glu Ile Ala Lys Leu Arg Arg Asp Val Asp Asn Gly Leu Ser Leu	705	710	715
Val Ile Phe Ser Asp Trp Tyr Asn Thr Ser Val Met Arg Lys Val Lys	725	730	735
Phe Tyr Asp Glu Asn Thr Arg Gln Trp Trp Met Pro Asp Thr Gly Gly	740	745	750
Ala Asn Ile Pro Ala Leu Asn Glu Leu Leu Ser Val Trp Asn Met Gly	755	760	765
Phe Ser Asp Gly Leu Tyr Glu Gly Glu Ile Thr Leu Ala Asn His Asp	770	775	780
Met Tyr Tyr Ala Ser Gly Cys Ser Ile Ala Lys Phe Pro Glu Asp Gly	785	790	795
Val Val Ile Thr Gln Thr Phe Lys Asp Gln Gly Leu Glu Val Leu Lys	805	810	815
Gln Glu Thr Ala Val Val Glu Asn Val Pro Ile Leu Gly Leu Tyr Gln	820	825	830
Ile Pro Ala Glu Gly Gly Gly Arg Ile Val Leu Tyr Gly Asp Ser Asn	835	840	845
Cys Leu Asp Asp Ser His Arg Gln Lys Asp Cys Phe Trp Leu Leu Asp	850	855	860
Ala Leu Leu Gln Tyr Thr Ser Tyr Gly Val Thr Pro Pro Ser Leu Ser	865	870	875
His Ser Gly Asn Arg Gln Arg Pro Pro Ser Gly Ala Gly Ser Val Thr	880	885	890
Pro Glu Arg Met Glu Gly Asn His Leu His Arg Tyr Ser Lys Val Leu	890	900	910
Glu Ala His Leu Gly Asp Pro Lys Pro Arg Pro Leu Pro Ala Cys Pro	915	920	925
Arg Leu Ser Trp Ala Lys Pro Gln Pro Leu Asn Glu Thr Ala Pro Ser	930	935	940
Asn Leu Trp Lys His Gln Lys Leu Leu Ser Ile Asp Leu Asp Lys Val			

945	950	955	960
Val Leu Pro Asn Phe Arg Ser Asn Arg Pro Gln Val Arg Pro Leu Ser	965	970	975
Pro Gly Glu Ser Gly Ala Trp Asp Ile Pro Gly Gly Ile Met Pro Gly	980	985	990
Arg Tyr Asn Gln Glu Val Gly Gln Thr Ile Pro Val Phe Ala Phe Leu	995	1000	1005
Gly Ala Met Val Val Leu Ala Phe Phe Val Val Gln Ile Asn Lys Ala	1010	1015	1020
Lys Ser Arg Pro Lys Arg Arg Lys Pro Arg Val Lys Arg Pro Gln Leu	1025	1030	1035
Met Gln Gln Val His Pro Pro Lys Thr Pro Ser Val	1045	1050	

<210> 109  
 <211> 280  
 <212> PRT  
 <213> Homo sapiens

Arg Ala Ile Pro Arg Gln Val Ala Gln Thr Leu Gln Ala Asp Val Leu	1	5	10	15
Trp Gln Met Gly Tyr Thr Gly Ala Asn Val Arg Val Ala Val Phe Asp	20	25	30	
Thr Gly Leu Ser Glu Lys His Pro His Phe Lys Asn Val Lys Gln Arg	35	40	45	
Thr Asn Trp Thr Asn Glu Arg Thr Leu Asp Asp Gly Leu Gly His Gly	50	55	60	
Thr Phe Val Ala Gly Val Ile Ala Ser Met Arg Glu Cys Gln Gly Phe	65	70	75	80
Ala Pro Asp Ala Glu Leu His Ile Phe Arg Val Phe Thr Asn Asn Gln	85	90	95	
Val Ser Tyr Thr Ser Trp Phe Leu Asp Ala Phe Asn Tyr Ala Ile Leu	100	105	110	
Lys Lys Ile Asp Val Leu Asn Leu Ser Ile Gly Gly Pro Asp Phe Met	115	120	125	
Asp His Pro Phe Val Asp Lys Val Trp Glu Leu Thr Ala Asn Asn Val	130	135	140	
Ile Met Val Ser Ala Ile Gly Asn Asp Gly Pro Leu Tyr Gly Thr Leu	145	150	155	160
Asn Asn Pro Ala Asp Gln Met Asp Val Ile Gly Val Gly Gly Ile Asp	165	170	175	

Phe Glu Asp Asn Ile Ala Arg Phe Ser Ser Arg Gly Met Thr Thr Trp  
 180 185 190  
 Glu Leu Pro Gly Gly Tyr Gly Arg Met Lys Pro Asp Ile Val Thr Tyr  
 195 200 205  
 Gly Ala Gly Val Arg Gly Ser Gly Val Lys Gly Gly Cys Arg Ala Leu  
 210 215 220  
 Ser Gly Thr Ser Val Ala Ser Pro Val Val Ala Gly Ala Val Thr Leu  
 225 230 235 240  
 Leu Val Ser Thr Val Gln Lys Arg Glu Leu Val Asn Pro Ala Ser Met  
 245 250 255  
 Lys Gln Ala Leu Ile Ala Ser Ala Arg Arg Leu Pro Gly Val Asn Met  
 260 265 270  
 Phe Gln Gln Gly His Gly Lys Leu  
 275 280

<210> 210  
 <211> 15  
 <212> PEST  
 <213> Artificial Sequence

<210>  
 <223> Description of Artificial Sequence: Synthetic

<400> 110  
 Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val  
 1 5 10 15

<210> 211  
 <211> 15  
 <212> PEST  
 <213> Artificial Sequence

<210>  
 <223> Description of Artificial Sequence: Synthetic

<400> 111  
 Ala Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val  
 1 5 10 15

<210> 112  
 <211> 15  
 <212> PEST  
 <213> Artificial Sequence

<210>  
 <223> Description of Artificial Sequence: Synthetic

<400> 112  
 Gly Ala Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val  
 1 5 10 15

<210> 213  
<211> 15  
<212> PPT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 213  
Gly Ser Ala Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val  
1 5 10 15

<210> 214  
<211> 15  
<212> PPT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 214  
Gly Ser Ile Ala Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val  
1 5 10 15

<210> 215  
<211> 15  
<212> PPT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 215  
Gly Ser Ile Ser Ala Pro Ala Arg Tyr Ala Asn Ala Met Ala Val  
1 5 10 15

<210> 216  
<211> 15  
<212> PPT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 216  
Gly Ser Ile Ser Tyr Ala Ala Arg Tyr Ala Asn Ala Met Ala Val  
1 5 10 15

<210> 217  
<211> 15  
<212> PPT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<410> 217  
 Gly Ser Ile Ser Tyr Pro Ala Ala Tyr Ala Asn Ala Met Ala Val  
     1                    5                    10                    15

<210> 218  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<214>  
 <215> Description of Artificial Sequence: Synthetic

<410> 218  
 Gly Ser Ile Ser Tyr Pro Ala Arg Ala Ala Asn Ala Met Ala Val  
     1                    5                    10                    15

<210> 219  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<214>  
 <215> Description of Artificial Sequence: Synthetic

<410> 219  
 Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Ala Ala Met Ala Val  
     1                    5                    10                    15

<210> 220  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<214>  
 <215> Description of Artificial Sequence: Synthetic

<410> 220  
 Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Ala Ala Val  
     1                    5                    10                    15

<210> 221  
 <211> 15  
 <212> PPT  
 <213> Artificial Sequence

<214>  
 <215> Description of Artificial Sequence: Synthetic

<410> 221  
 Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Ala  
     1                    5                    10                    15

<210> 222  
 <211> 15

02120 PPT  
 02130 Humicola insolens

04000 021  
 Pro Gly Gly Val Ala Tyr Ser Cys Ala Asp Gln Thr Pro Trp Ala  
 1 5 10 15

02100 023  
 02110 025  
 02120 PPT  
 02130 Humicola insolens

04000 023  
 Cys Gly Trp Ala Lys Lys Ala Pro Val Asn Gln Pro Val Phe Ser  
 1 5 10 15

02100 024  
 02110 026  
 02120 PPT  
 02130 Humicola insolens

04000 024  
 Met Arg Ser Ser Pro Leu Leu Pro Ser Ala Val Val Ala Ala Leu Pro  
 1 5 10 15

Val Leu Ala Leu Ala Ala Asp Gly Arg Ser Thr Arg Tyr Trp Asp Cys  
 20 25 30

Cys Lys Pro Ser Cys Gly Trp Ala Lys Lys Ala Pro Val Asn Gln Pro  
 35 40 45

Val Phe Ser Cys Asn Ala Asn Phe Gln Arg Ile Thr Asp Phe Asp Ala  
 5 55 60

Lys Ser Gly Cys Glu Pro Gly Gly Val Ala Tyr Ser Cys Ala Asp Gln  
 65 70 75 80

Thr Pro Trp Ala Val Asn Asp Asp Phe Ala Leu Gly Phe Ala Ala Thr  
 85 90 95

Ser Ile Ala Gly Ser Asn Glu Ala Gly Trp Cys Cys Ala Cys Tyr Glu  
 100 105 110

Leu Thr Phe Thr Ser Gly Pro Val Ala Gly Lys Lys Met Val Val Gln  
 115 120 125

Ser Thr Ser Thr Gly Gly Asp Leu Gly Ser Asn His Phe Asp Leu Asn  
 130 135 140

Ile Arg Gly Gly Gly Val Gly Ile Phe Asp Gly Cys Thr Pro Gln Phe  
 145 150 155 160

Gly Gly Leu Pro Gly Gln Arg Tyr Gly Gly Ile Ser Ser Arg Asn Gln  
 165 170 175

Cys Asp Arg Phe Pro Asp Ala Leu Lys Pro Gly Cys Tyr Trp Arg Phe  
 180 185 190

Asp Trp Phe Lys Asn Ala Asp Asn Pro Ser Phe Ser Phe Arg Gln Val  
195 200 205

Gln Cys Pro Ala Glu Leu Val Ala Arg Thr Gly Cys Arg Arg Asn Asp  
210 215 220

Asp Gly Asn Phe Pro Ala Val Gln Ile Pro Ser Ser Ser Thr Ser Ser  
225 230 235 240

Pro Val Asn Gln Pro Thr Ser Thr Ser Thr Ser Thr Ser Thr Thr  
245 250 255

Ser Ser Pro Pro Val Gln Pro Thr Thr Pro Ser Gly Cys Thr Ala Glu  
260 265 270

Arg Trp Ala Gln  
275

<110> 225

<111> 19

<112> PRT

<113> Thermomyces lanuginosus

<400> 111

Gly Asp Val Thr Gly Phe Leu Ala Leu Asp Asn Thr Asn Lys Leu Ile  
1 5 10 15

Val Leu

<110> 226

<111> 15

<112> PRT

<113> Thermomyces lanuginosus

<400> 111

Ser Ile Glu Asn Trp Ile Gly Asn Leu Asn Phe Asp Leu Lys Glu  
1 5 10 15

<110> 227

<111> 191

<112> PRT

<113> Thermomyces lanuginosus

<400> 127

Met Arg Ser Ser Leu Val Leu Phe Phe Val Ser Ala Trp Thr Ala Leu  
1 5 10 15

Ala Ser Pro Ile Arg Arg Glu Val Ser Gln Asp Leu Phe Asn Gln Phe  
20 25 30

Asn Leu Phe Ala Gln Tyr Ser Ala Ala Ala Tyr Cys Gly Lys Asn Asn  
35 40 45

Asp Ala Pro Ala Gly Thr Asn Ile Thr Cys Thr Gly Asn Ala Cys Pro  
50 55 60

Glu Val Glu Lys Ala Asp Ala Thr Phe Leu Tyr Ser Phe Glu Asp Ser  
 65 71 75 80  
 Gly Val Gly Asp Val Thr Gly Phe Leu Ala Leu Asp Asn Thr Asn Lys  
 85 90 95  
 Leu Ile Val Leu Ser Phe Arg Gly Ser Arg Ser Ile Glu Asn Trp Ile  
 100 105 110  
 Gly Asn Leu Asn Phe Asp Leu Lys Glu Ile Asn Asp Ile Cys Ser Gly  
 115 120 125  
 Cys Arg Gly His Asp Gly Phe Thr Ser Ser Trp Arg Ser Val Ala Asp  
 130 135 140  
 Thr Leu Arg Gln Lys Val Glu Asp Ala Val Arg Glu His Pro Asp Tyr  
 145 150 155 160  
 Arg Val Val Phe Thr Gly His Ser Leu Gly Gly Ala Leu Ala Thr Val  
 165 170 175  
 Ala Gly Ala Asp Leu Arg Gly Asn Gly Tyr Asp Ile Asp Val Phe Ser  
 180 185 190  
 Tyr Gly Ala Pro Arg Val Gly Asn Arg Ala Phe Ala Glu Phe Leu Thr  
 195 200 205  
 Val Gln Thr Gly Gly Thr Leu Tyr Arg Ile Thr His Thr Asn Asp Ile  
 210 215 220  
 Val Pro Arg Leu Pro Pro Arg Glu Phe Gly Tyr Ser His Ser Ser Pro  
 225 230 235 240  
 Glu Tyr Trp Ile Lys Ser Gly Thr Leu Val Pro Val Thr Arg Asn Asp  
 245 250 255  
 Ile Val Lys Ile Glu Gly Ile Asp Ala Thr Gly Gly Asn Asn Gln Pro  
 260 265 270  
 Asn Ile Pro Asp Ile Pro Ala His Leu Trp Tyr Phe Gly Leu Ile Gly  
 275 280 285  
 Thr Lys Leu  
 290

0110-228

0111-18

0112-PRT

0113-Streptomyces plicatus

0110-228

Ile Lys Val Leu Leu Ser Val Leu Gly Asn His Gln Gly Ala Gly  
 1 5 10 15

0110-229

0111-313

0112-PRT

0113-Streptomyces plicatus

<400> 223

Met	Phe	Thr	Pro	Val	Arg	Arg	Arg	Val	Arg	Thr	Ala	Ala	Leu	Ala	Leu
1				5					10					15	
Ser	Ala	Ala	Ala	Ala	Leu	Val	Leu	Gly	Ser	Thr	Ala	Ala	Ser	Gly	Ala
			20					25					30		
Ser	Ala	Thr	Pro	Ser	Pro	Ala	Pro	Ala	Pro	Ala	Pro	Ala	Pro	Val	Lys
			35				40					45			
Gln	Gly	Pro	Thr	Ser	Val	Ala	Tyr	Val	Glu	Val	Asn	Asn	Asn	Ser	Met
	50					55					60				
Leu	Asn	Val	Gly	Lys	Tyr	Thr	Leu	Ala	Asp	Gly	Gly	Gly	Asn	Ala	Phe
65					70					75					80
Asp	Val	Ala	Val	Ile	Phe	Ala	Ala	Asn	Ile	Asn	Tyr	Asp	Thr	Gly	Thr
				85					90					95	
Lys	Thr	Ala	Tyr	Leu	His	Phe	Asn	Glu	Asn	Val	Gln	Arg	Val	Leu	Asp
			100					105						110	
Asn	Ala	Val	Thr	Gln	Ile	Arg	Pro	Leu	Gln	Gln	Gln	Gly	Ile	Lys	Val
		115					120					125			
Leu	Leu	Ser	Val	Leu	Gly	Asn	His	Gln	Gly	Ala	Gly	Phe	Ala	Asn	Phe
	130					135						140			
Pro	Ser	Gln	Gln	Ala	Ala	Ser	Ala	Phe	Ala	Lys	Gln	Leu	Ser	Asp	Ala
145				150						155					160
Val	Ala	Lys	Tyr	Gly	Leu	Asp	Gly	Val	Asp	Phe	Asp	Asp	Glu	Tyr	Ala
				165					170					175	
Glu	Tyr	Gly	Asn	Asn	Gly	Thr	Ala	Gln	Pro	Asn	Asp	Ser	Ser	Phe	Val
			180					185						190	
His	Leu	Val	Thr	Ala	Leu	Arg	Ala	Asn	Met	Pro	Asp	Lys	Ile	Ile	Ser
		195					200					205			
Leu	Tyr	Asn	Ile	Gly	Pro	Ala	Ala	Ser	Arg	Leu	Ser	Tyr	Gly	Gly	Val
	210					215					220				
Asp	Val	Ser	Asp	Lys	Phe	Asp	Tyr	Ala	Trp	Asn	Pro	Tyr	Tyr	Gly	Thr
225				230						235					240
Trp	Gln	Val	Pro	Gly	Ile	Ala	Leu	Pro	Lys	Ala	Gln	Leu	Ser	Pro	Ala
				245					250					255	
Ala	Val	Glu	Ile	Gly	Arg	Thr	Ser	Arg	Ser	Thr	Val	Ala	Asp	Leu	Ala
			260					265					270		
Arg	Arg	Thr	Val	Asp	Glu	Gly	Tyr	Gly	Val	Tyr	Leu	Thr	Tyr	Asn	Leu
			275				280						285		
Asp	Gly	Gly	Asp	Arg	Thr	Ala	Asp	Val	Ser	Ala	Phe	Thr	Arg	Glu	Leu
	290					295					300				
Tyr	Gly	Ser	Glu	Ala	Val	Arg	Thr	Pro							

305

310

Q110&gt; 230

Q111&gt; 15

Q112&gt; PPT

Q113&gt; Bacillus amyloliquefaciens

Q400&gt; 230

Gly Thr Val Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val  
 1 5 10 15

Q113&gt; 231

Q114&gt; 15

Q115&gt; PPT

Q116&gt; Bacillus amyloliquefaciens

Q401&gt; 231

Asn Gly Ile Glu Trp Ala Ile Ala Asn Asn Met Asp Val Ile Asn  
 1 5 10 15

Q116&gt; 232

Q117&gt; 15

Q118&gt; PPT

Q119&gt; Bacillus lentus

Q402&gt; 232

Thr Gly Ser Gly Val Lys Val Ala Val Leu Asp Thr Gly Ile Ser  
 1 5 10 15

Q119&gt; 233

Q120&gt; 15

Q121&gt; PPT

Q122&gt; Bacillus lentus

Q403&gt; 233

Ser Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser  
 1 5 10 15

Q210&gt; 234

Q211&gt; 17

Q212&gt; PPT

Q213&gt; Bacillus lentus

Q404&gt; 234

Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val Gly  
 1 5 10 15

Ala

Q214&gt; 235

Q215&gt; 15

Q216&gt; PPT

Q217&gt; Bacillus lentus

4400-235

Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Asn Val Gln Ser  
1 5 10 15

4410-236

4411-271

4412-PRF

4413-Artificial Sequence

4400-

4413-Description of Artificial Sequence: Hybrid of  
Bacillus lentus and Bacillus amyloliquefaciens

4400-236

Ala Gln Ser Val Pro Trp Gly Ile Ser Arg Val Gln Ala Pro Ala Ala  
1 5 10 15

His Asn Arg Gly Leu Thr Gly Ser Gly Val Lys Val Ala Val Leu Asp  
20 25 30

Thr Gly Ile Ser Thr His Pro Asp Leu Asn Ile Arg Gly Gly Ala Ser  
35 40 45

Phe Val Pro Gly Glu Pro Ser Thr Gln Asp Gly Asn Gly His Gly Thr  
50 55 60

His Val Ala Gly Thr Ile Ala Ala Leu Asn Asn Ser Ile Gly Val Leu  
65 70 75 80

Gly Val Ala Pro Ser Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala  
85 90 95

Ser Gly Ser Gly Ser Val Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala  
100 105 110

Gly Asn Asn Gly Met His Val Ile Asn Met Ser Leu Gly Gly Ser Gly  
115 120 125

Ser Ala Ala Leu Lys Ala Ala Val Asp Lys Ala Val Ala Ser Gly Val  
130 135 140

Val Val Val Ala Ala Ala Gly Asn Glu Gly Thr Ser Gly Ser Ser Ser  
145 150 155 160

Thr Val Gly Tyr Pro Gly Lys Tyr Pro Ser Val Ile Ala Val Gly Ala  
165 170 175

Val Asp Ser Ser Asn Gln Arg Ala Ser Phe Ser Ser Val Gly Pro Glu  
180 185 190

Leu Asp Val Met Ala Pro Gly Val Ser Ile Gln Ser Thr Leu Pro Gly  
195 200 205

Asn Lys Tyr Gly Ala Tyr Asn Gly Thr Ser Met Ala Ser Pro His Val  
210 215 220

Ala Gly Ala Ala Ala Leu Ile Leu Ser Lys His Pro Asn Trp Thr Asn  
225 230 235 240

Thr Gln Val Arg Ser Ser Leu Glu Asn Thr Thr Thr Lys Leu Gly Asp  
245 250 255

Ser Phe Tyr Tyr Gly Lys Gly Leu Ile Asn Val Gln Ala Ala Ala Gln  
260 265 270